

IN THE CLAIMS

Please amend Claims 1, 15 and 28 as follows.

1. (Currently Amended) An image processing apparatus for encoding input motion-image data by using intra-frame coding and inter-frame coding, and encoding input still-image data as pictures for a predetermined period of time by using the same encoding method as the encoding method of the motion-image data, said image processing apparatus comprising:

an input unit configured to receive motion-image data and still-image data;

a control-signal receiving unit configured to receive a still-image-recording control signal indicating that still-image recording rather than motion-image recording is to occur;

a still-image-recording control circuit controlling actuation of still-image recording in response to receipt of a still-image-recording control signal by said control-signal receiving unit;

a still-image-data memory unit configured to store the input still-image data input by said input unit in response to an instruction from said still-image-recording control circuit and continuously output the stored input still-image data during a predetermined period;

a circuit having a switch that is controlled to provide the still-image data continuously received from the still-image-data memory unit in place of the motion-image data, in response to the instruction from the still-image-recording control circuit;

a quantization unit configured to quantize still-image data and motion-image data received from said circuit image data;

a control unit configured to control a quantization method in said quantization unit so that a quantization step becomes smaller than a quantization step for motion-image data when still-image data stored in said still-image-data memory unit is quantized; and

an encoding unit configured to generate intra-frame coded data and inter-frame coded data from still-image data quantized by said quantization unit, and generate from one still image, a plurality of groups of pictures in which each group of pictures includes the intra-frame coded data and a plurality of the inter-frame coded data,

wherein said encoding unit generates the inter-frame coded data, which includes bi-directionally predictive frames, by encoding a difference between the input still-image data and predicted data converted from the generated intra-frame coded data and inter-frame coded data previously, and sets a start group of pictures among the generated plurality of groups of pictures as a closed group of pictures.

2-3. (Canceled)

4. (Previously Presented) An image processing apparatus according to Claim 1, wherein said quantization unit performs quantization based on the product of a quantization matrix and a quantization characteristic value.

5. (Previously Presented) An image processing apparatus according to Claim 4, wherein said quantization unit quantizes the still-image data stored in said memory unit using a quantization characteristic value having a smaller step than the step of a quantization characteristic value used to quantize the motion-image data.

6. (Previously Presented) An image processing apparatus according to Claim 4, wherein said quantization unit quantizes the still-image data stored in said memory unit using a quantization matrix different from a quantization matrix used to quantize the motion-image data.

7. (Currently Amended) An image processing apparatus according to Claim 1, further comprising:

a motion compensation prediction unit configured to perform motion compensation prediction for inter-frame coding on the motion-image data in response to the motion-image data being received by said input unit,

wherein; said still-image-recording control circuit controls said motion compensation prediction unit when the still-image data stored in said memory unit is quantized, said control unit controls the motion compensation prediction in said motion compensation prediction unit so as to refrain from performing motion compensation and suppress or prohibit the occurrence of motion vectors in response to receipt of a still-image-recording control signal by said control-signal receiving unit indicating that still-image recording rather than motion-image recording is to occur.

8-9. (Canceled)

10. (Withdrawn) An image processing apparatus for compressing input image data and outputting the compressed data, said image processing apparatus comprising:

a memory that stores input still-image data and outputs the stored still-image data continuously for a predetermined period of time;

compressing means for compressing input motion-picture data, or the still-image data output from said memory continuously for the predetermined period of time, using at least an inter-frame coding compression technique; and

control means for controlling a direction of prediction of the inter-frame coding in said compressing means when the still-image data is compressed.

11. (Withdrawn) An image processing apparatus according to Claim 10, wherein, when the still-image data is compressed, said control means controls said compressing means so that a frame coding unit at which processing of the still-image data starts is not predicted from an immediately preceding frame coding unit.

12. (Withdrawn) An image processing apparatus according to Claim 11, further comprising motion compensation prediction means for performing motion compensation prediction of inter-frame coding,

wherein the still-image data has a frame structure, and frame prediction is performed.

13. (Withdrawn) An image processing apparatus for compressing input image data and outputting the compressed data, said image processing apparatus comprising:

resolution converting means for converting a resolution of the input image data;
a memory that stores still-image data output from said resolution converting means and outputs the stored still-image data continuously for a predetermined period of time;

compressing means for compressing motion-picture data output from said resolution converting means, or the still-image data output from said memory continuously for the predetermined period of time, using at least an inter-frame coding compression technique; and control means for activating said resolution converting means when the motion-picture data is compressed, and for deactivating or suppressing the operation of said resolution converting means when the still-image data is compressed.

14. (Withdrawn) An image processing apparatus according to Claim 13, further comprising motion compensation prediction means for performing motion compensation prediction for inter-frame coding,

wherein said control means controls said motion compensation prediction means so as to suppress or prohibit the occurrence of motion vectors for motion compensation prediction when the still-image data is compressed.

15. (Currently Amended) An image processing apparatus for encoding input motion-image data by using intra-frame coding and inter-frame coding, and encoding input still-image data as pictures for a predetermined period of time by using the same encoding method as the encoding method of the motion-image data, said image processing apparatus comprising:

an input unit configured to receive motion-image data and still-image data;
a control-signal receiving unit configured to receive a still-image-recording control signal
indicating that still-image recording rather than motion-image recording is to occur;
a still-image-recording control circuit controlling actuation of still-image recording in
response to receipt of a still-image-recording control signal by said control-signal receiving unit;

a still-image-data memory unit configured to store the input still-image data input by said input unit in response to an instruction from said still-image-recording control circuit and continuously output the stored input still-image data during a predetermined period;

a circuit having a switch that is controlled to provide the still-image data continuously received from the still-image-data memory unit in place of the motion-image data, in response to the instruction from the still-image-recording control circuit;

a quantization unit configured to quantize still-image data and motion-image data received from said circuit image data;

a control unit configured to control said quantization unit so that said quantization unit uses a variable quantization characteristic value when the motion-image data is quantized and uses a constant quantization characteristic value when the still-image data stored in said still-image-data memory unit is quantized; and

an encoding unit configured to generate intra-frame coded data and inter-frame coded data from still-image data quantized by said quantization unit, and generate from one still image, a plurality of groups of pictures in which each group of pictures includes the intra-frame coded data and a plurality of the inter-frame coded data,

wherein said encoding unit generates the inter-frame coded data, which includes bi-directionally predictive frames, by encoding a difference between the input still-image data and predicted data converted from the generated intra-frame coded data and inter-frame coded data previously, and sets a start group of pictures among the generated plurality of groups of pictures as a closed group of pictures.

16. (Previously Presented) An image processing apparatus according to Claim 15, further comprising a memory that stores the constant quantization characteristic value used to quantize the still-image data.

17. (Previously Presented) An image processing apparatus according to Claim 15, further comprising a motion compensation prediction unit configured to perform motion compensation prediction for inter-frame coding,

wherein said control unit controls the motion compensation prediction in said motion compensation prediction unit so as to suppress or prohibit the occurrence of motion vectors when the still-image data stored in said memory unit is quantized.

18-25. (Canceled)

26. (Previously Presented) An image processing apparatus according to Claim 1, further comprising a recording unit configured to record the still-image data encoded by said encoding unit on a recording medium.

27. (Previously Presented) An image processing apparatus according to Claim 15, further comprising a recording unit configured to record the still-image data encoded by said encoding unit on a recording medium.

28. (Currently Amended) An image processing apparatus for encoding input motion-image data by using intra-frame coding and inter-frame coding, and encoding input still-image

data as pictures for a predetermined period of time by using the same encoding method as the encoding method of the motion-image data, said image processing apparatus comprising:

an input unit configured to receive motion-image data and still-image data;

a control-signal receiving unit configured to receive a still-image-recording control signal indicating that still-image recording rather than motion-image recording is to occur;

a still-image-recording control circuit controlling actuation of still-image recording in response to receipt of a still-image-recording control signal by said control-signal receiving unit;

a still-image-data memory unit configured to store the input still-image data input by said input unit in response to an instruction from said still-image-recording control circuit and continuously output the stored input still-image data during a predetermined period;

a circuit having a switch that is controlled to provide the still-image data continuously received from the still-image-data memory unit in place of the motion-image data, in response to the instruction from the still-image-recording control circuit;

a quantization unit configured to quantize still-image data and motion-image data received from said circuit image data;

a control unit configured to control a quantization method in said quantization unit so that a quantization characteristic value is fixed for each picture when still-image data stored in said still-image data memory unit is quantized; and

an encoding unit configured to generate intra-frame coded data and inter-frame coded data from still-image data quantized by said quantization unit, and generate from one still image, a plurality of groups of pictures in which each group of pictures includes the intra-frame coded data and a plurality of the inter-frame coded data,

wherein said encoding unit generates the inter-frame coded data, which includes

bi-directionally predictive frames, by encoding a difference between the input still-image data and predicted data converted from the generated intra-frame coded data and inter-frame coded data previously, sets a start group of pictures among the generated plurality of groups of pictures as a closed group of pictures.

29. (Previously Presented) An image processing apparatus according to Claim 28, further comprising a motion compensation prediction unit configured to perform motion compensation prediction for inter-frame coding,

wherein said control unit controls the motion compensation prediction in said motion compensation prediction unit so as to suppress or prohibit the occurrence of motion vectors when the still-image data stored in said memory unit is quantized.

30. (Previously Presented) An image processing apparatus according to Claim 28, further comprising a recording unit configured to record the still-image data encoded by said encoding unit on a recording medium.